

ABSTRACT OF THE DISCLOSURE

A transmitted type diffractive optical element comprises a transparent plate made of a material having a refractive index n_2 , whereas the transparent plate is in contact with a medium having a refractive index n_1 . A number of projections are arranged with a period L on the first surface side of the transparent plate. Each projection has a rectangular cross section with a height H and a width W . An antireflection layer is formed on the second surface of the transparent plate. When the light L_1 having a wavelength λ is incident on the first surface at an incident angle θ , the transmitted type diffractive optical element satisfies $(2n_1L/\lambda)\sin\theta=1$ and $n_2/n_1\leq 3\sin\theta$, whereas each of the diffraction efficiencies of transmitted first-order diffracted light L_{31} in TE and TM polarization modes is at least 0.8.